



## ANZCA and FPM CPD Program

### Malignant hyperthermia ER session guideline

Group activity

Category 3  
Emergency response

#### Purpose

This guideline assists hospitals, private practice groups and other course providers develop and conduct Malignant hyperthermia Emergency Response (ER) sessions. It defines the learning objectives and other requirements for education providers to become recognised malignant hyperthermia ER providers for the purposes of the [ANZCA and FPM CPD program](#).

For CPD participants, this guideline provides information on what recognised Malignant Hyperthermia ER sessions involve and how to record this activity.

#### Related documents

1. [Malignant hyperthermia ER activity recognition of suitability application form](#)  
Course providers must apply for college recognition of your session as a suitable Malignant hyperthermia ER activity for the ANZCA and FPM CPD program. Providers are encouraged to develop sessions that also satisfy local needs, incorporating local staff, work environments and equipment.

#### Importance of Malignant Hyperthermia ER education

Malignant Hyperthermia is a rare potentially fatal pharmacogenetic disorder if prompt treatment is not instituted. There are many high priority tasks that must be attended to simultaneously.

The morbidity and mortality from malignant hyperthermia has declined significantly due to the availability of dantrolene, improved education and awareness of malignant hyperthermia and a team-based approach to management of a malignant hyperthermia crisis. Diagnostic uncertainty and insufficient familiarity with management steps have been recognised as posing challenges to anaesthetists in crisis situations.

Outcomes can be improved where recognition of malignant hyperthermia, and rehearsal of emergency procedures are included as essential components of training. Ideally, training will occur within a team and in their regular working environment.

Participants should be aware of electronic resources to assist them to develop a Malignant hyperthermia Box, which can be made available to assist with this training, and to be utilised in the event of malignant hyperthermia in all operating theatres where they work.

Anaesthetists and pain medicine specialists should be aware of the location of their nearest Malignant Hyperthermia testing centre and refer to them. Lack of knowledge about essential follow up and referral for definitive testing and diagnosis places patients and their family members at risk for subsequent malignant hyperthermia crises. Referral is the responsibility of the treating anaesthetist or pain medicine specialist and should not be delegated to the surgical team or general practitioner.

Anaesthetists and pain medicine specialists should be able to prepare the anaesthetic workstation to deliver an Malignant Hyperthermia safe anaesthetic if they encounter a patient that is Malignant Hyperthermia susceptible or potentially Malignant Hyperthermia susceptible. This ensures the safety of the patient and prevents a crisis occurring.

## Recommended resources

### *Recognised emergency algorithms*

ANZCA recognises that several published algorithms exist for the treatment of malignant hyperthermia. Malignant Hyperthermia Australia and New Zealand (MHANZ) has published algorithms, which closely align with the algorithms published by the European malignant hyperthermia group (EMHG) and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) (see recommended readings), should be used for Malignant Hyperthermia treatment.

See [Malignant Hyperthermia Australia and New Zealand \(MHANZ\)](#)  
[MHANZ Information for anaesthetists](#)  
[MHANZ Malignant Hyperthermia resource kit](#)

### *Recommended readings*

1. AAGBI. [Malignant Hyperthermia 2020 consensus statement](#)
2. EMHG. [Recognizing and managing a Malignant Hyperthermia crisis guidelines](#)

## Session format

This activity requires ANZCA and FPM CPD participants to complete a recognised education session, with acceptable formats including practical simulations, workshops or online learning resources.

## Learning objectives

### Scope of Malignant Hyperthermia ER sessions

To achieve recognition for the ANZCA and FPM CPD Program, the education session must address the objectives below.

By the end of the session, participants will be able to:

### Mandatory learning objectives

#### *Knowledge*

1. Identify which patients should be considered potentially susceptible to malignant hyperthermia.
2. Identify the common clinical features of malignant hyperthermia, including recognition that not all these features need to be present to make a diagnosis of malignant hyperthermia.
3. List the differential diagnoses of malignant hyperthermia.
4. Recognise that non-technical and teamwork skills, as well as initiation of management protocols, are vital to the management of malignant hyperthermia.
5. Understand the pivotal role that dantrolene plays in the treatment of malignant hyperthermia and the correct dosing of dantrolene.
6. Recognise that the removal of the trigger for malignant hyperthermia is equally as pivotal as dantrolene.
7. Describe the management of life-threatening complications that can occur due to malignant hyperthermia.
8. Describe the management steps following patient stabilisation including creatine kinase measurements and the reasons for serial measurements at recommended times.
9. Explain why it is the anaesthetist's responsibility to ensure that a patient is referred to and investigated by a specialist testing centre.
10. Prepare the anaesthetic workstation to deliver a malignant hyperthermia safe anaesthetic.
11. Recognise which drugs are safe and not safe to be administered to Malignant Hyperthermia susceptible and potentially susceptible patients.
12. Understand the use of charcoal filters.

13. Recognise that as an inherited condition, extended family members are at risk of a malignant hyperthermia reaction.
14. Understand the testing pathways involved in malignant hyperthermia.
15. Understand the pathophysiology involved in malignant hyperthermia.
16. Identify the disorders associated with malignant hyperthermia.

## Skills

1. Apply the MHANZ Malignant Hyperthermia initial crisis management card for urgent measures.
2. Communicate with other health professional that a critical situation exists when malignant hyperthermia is suspected and use cognitive aids to improve team performance.
3. Adopt the role of team leader in the treatment of malignant hyperthermia, and coordinate the team response.
4. Apply the MHANZ Malignant hyperthermia Post-Crisis Management card and discuss with patients/family about the event and the plan for follow up. An event letter should be given to the patient, in order to alert health professionals in case of an emergency before testing has taken place and prior to follow-up at a specialist testing centre.

## Optional learning objectives

Departments developing an education session may elect to expand the focus of teaching on the recognition of Malignant Hyperthermia and understand the team approach needed to deliver dantrolene to the patient and stop the trigger at the right time. Important educational points should include:

- Recognising the non-technical and teamwork competencies that have a positive impact during management of Malignant Hyperthermia and evolving crises, and employ strategies to utilise them.
- Adoption of hospital protocols

## Session structure

Education session delivered in a workshop or structured group discussion format must:

1. Provide pre-course reading (could be web-based) that provides relevant foundation knowledge of the session content.
2. Have a minimum total duration of ninety (90) minutes, which should include discussion of cases and the practical application of relevant knowledge.
3. Provide case-based discussion or scenario-based simulation activities.
4. Utilise cases that include a variety of clinical features and degrees of severity at presentation.
5. Be facilitated by a clinician who is skilled and experienced to deliver the content of the session. If possible, the facilitator will have medical education experience and/or credentials.
6. Provide one facilitator per 15 participants' ratio. Facilitators must be actively engaged with each participant.
7. Course directors who wish to record information relating to the performance or conduct of participants must obtain written consent and adhere to the privacy policies of their organisation and location. ANZCA does not collect this information and it is optional for the course provider and director to do so.

## Session materials

The following materials (in hard or electronic format) may be provided to facilitators and/or participants as relevant:

- Certificate of participation/completion to be provided to the CPD participants with the recognition code provided by ANZCA and the duration (hours) of the course/workshop.

- Facilitator guide (including equipment list, scenario outlines)
- Participant list (date, venue, participant names)
- Session learning objectives and outline
- Relevant state or national guidelines and management resources as handouts
- Session evaluation form (feedback from participants)

## ANZCA and FPM CPD portfolio recording

Participants record this activity under

- Category 3 *Emergency response: Malignant hyperthermia ER* with the Certificate of completion uploaded as evidence.

Facilitators who are also CPD participants record this activity under

- Category 3 *Emergency response: Malignant hyperthermia ER* with confirmation of facilitation uploaded as evidence.

## Change control register

Version	Author/s	Reviewed by	Approved by	Approval date	Sections modified
1	Dr Amit Surah Dr Robyn Giles	CPD Team	CPD Committee	2023	Created